Third United Nations International Conference on the Peaceful Uses of Atomic Energy

A/CONF.28/A/81
FRANCE
February 1964
Original: FRENCH

Confidential until official release during Conference

Abstract

THE SAFETY OF GRAPHITE-GAS SEQUENCE REACTORS

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Considerations of safety play an important part in the development of graphite-gas reactors, which are at present represented by the MARCOULE AND CHINON reactors, for which E.D.F.4 and E.D.F.5 reactors constitute the subsequent stages.

Safety comes into play during the design and construction stages of the structures, in particular involving an examination of the problems of building the containment vessel around the core and the primary cooling circuit (steel or prestressed concrete, external or built-in heat exchangers).

While operating, safety is particulary dependent on well-chosen arrangement of the instrumentation in the core, on the satisfactory operation of automatic devices and safety sequences, and on any waste. These various points are examined in turn. Safety requirements also give rise to upper power ceilings either in steady-state or transient regimes.

The principal incidents liable to occur are reviewed, and the theoretical and experimental means of studying them, and the steps taken to minimise their consequences are examined.

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Translation provided by courtesy of the submitting Government